

Notice of Allowability

Application No.

10/773,414

Applicant(s)

DOLITZKY ET AL.

Examiner

Anthony J. Paviglianiti

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to Response to Restriction dated June 23, 2005.
2. ☒ The allowed claim(s) is/are 1-11.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some* c) ☐ None of the:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|--|---|
| 1. <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6. <input checked="" type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date _____. |
| 3. <input checked="" type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date <u>8/5/04</u> | 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9. <input type="checkbox"/> Other _____. |

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DETAILED ACTION

Applicant's Response to Restriction Requirement dated June 23, 2005, has been entered, electing **Claims 1 – 11**; accordingly, **Claims 12 – 46** were withdrawn from consideration as drawn to a non-elected invention. The restriction requirement was subsequently withdrawn.

Claims 12 – 46 were cancelled by examiner's amendment authorized by applicant.

Priority

This application claims priority to U.S. Provisional Application No. 60/445,218 (filing date February 5, 2003) and U.S. Provisional Application No. 60/465,905 (filing date April 28, 2003).

Information Disclosure Statement

The Information Disclosure Statement filed on August 5, 2004, is in compliance with 37 C.F.R. §1.97, and was considered by the examiner.

Specification

Two minor typographical errors are corrected by examiner's amendment authorized by applicant: page 3, line 5 ("salt") and page 3, line 12 ("heating").

Election/Restrictions

In the Response to Restriction Requirement entered June 23, 2005, Applicant elected, without traverse, the invention of **Group I (Claims 1 – 11)**; accordingly, **Claims 12 – 46** were withdrawn from further consideration as being drawn to a non-elected invention pursuant to 37 C.F.R. §1.142(b). However, after a search of the prior art established that the elected invention was free of the art and allowable, **the restriction requirement was withdrawn.**

Examiner's Amendment

An examiner's amendment to the record appears below. Should the changes and additions be unacceptable to applicant, an amendment may be filed as provided by 37 C.F.R. §1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Agreement for the following examiner's amendment was reached in a telephone interview with John B. Starr, Esq., on September 2, 2005, who authorized the following amendments:

Delete Claims 12 – 46.

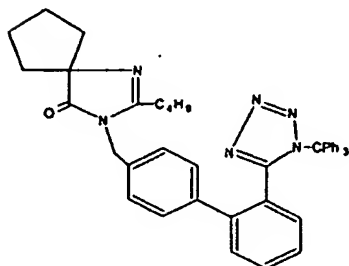
In the **Specification**, page 3, line 5, delete "slat" and insert ---salt---.

In the **Specification**, page 3, line 12, delete "hating" and insert ---heating---.

A summary of the agreement may also be found on USPTO Form PTOL-413 (Interview Summary Form), dated September 2, 2005. It is not necessary for applicant to provide a separate record of the substance of the telephone interview of September 2, 2005.

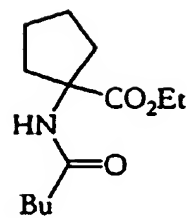
Reasons for Allowance

The following is an examiner's statement of reasons for allowance: The present invention is directed to a process of making the compound, "2-butyl-3-[2'-(1-trityl-1H-tetrazol-5-yl)biphenyl-4-ylmethyl]-1,3-diazaspiro[4.4]non-1-ene-4-one," having the chemical structure:

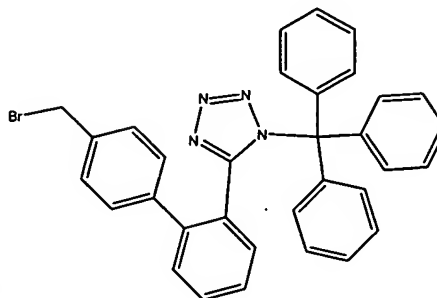


, also known as "trityl irbesartan," comprising the steps of reacting

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“1-(N'-pentanoylamino)cyclopentanecarboxylic acid amide,” with “5-(4'-

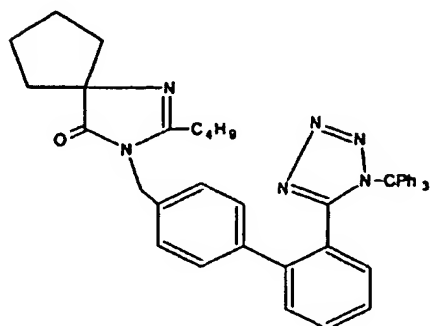


bromomethylbiphenyl-2-yl)-1-trityl-1H-tetrazole,”

, in the

presence of an inorganic base, a solvent, and a phase transfer catalyst; then cooling the mixture; then adding water to the mixture to obtain two phases; then separating the two phases and recovering the compound of structure (I). The final product in this invention is disclosed as having utility in the synthesis of “irbesartan,” which has activity as an angiotensin II receptor antagonist.

Other processes for making the final product claimed in this invention, “2-butyl-3-[2'-(1-trityl-1H-tetrazol-5-yl)biphenyl-4-ylmethyl]-1,3-diazaspiro[4.4]non-1-ene-4-one,”



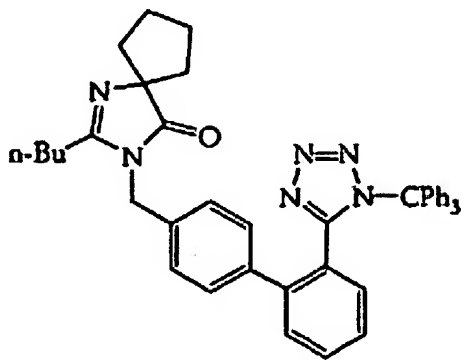
(trityl irbesartan) were known in the art before this application.

See, e.g., WO 99/06398 A1 (Castro, B., et al.), at p. 13, lines 15 – 29 (Example VIII: process of making “2-*n*-butyl-4-spirocyclopentane-1-[(2'-(triphenylmethyl-tetrazol-5-yl)-4-

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biphenyl)methyl]-2-imidazolin-5-one”). However, none of these published methods anticipated, or rendered obvious, the reaction of the two particular chemical reactants claimed in **Claim 1(a)** of this invention, nor their combination in the presence of the other reagents/solvents comprising the limitations in **Claim 1(a)**, nor the remaining reaction steps in **Claim 1(b) – (e)**. Nor do the published methods for making “irbesartan” itself (or its related analogs losartan and candesartan) combine these particular reactants at any stage of synthesis, and thus do not anticipate or render obvious the steps in **Claim 1** of the present invention, or in its dependent claims, **Claims 2 – 11**.

The closest prior art is, in fact, the reference cited earlier, **WO 99/06398 A1**, by Bertrand Castro, et al., who published a process of making “2-*n*-butyl-4-spirocyclopentane-1-[(2'-(triphenylmethyl-tetrazol-5-yl)-4-biphenyl)methyl]-2-imidazolin-5-one”) (i.e., trityl



irbesartan), , by combining the reactant “4'-(2-*n*-butyl-4-spirocyclopentane-2-imidazoline-5-on-1-yl)methyl-2-cyano-1,1'-biphenyl” with “tributyl tin” (TBT) and xylene at reflux temperature for 66 hours, and recrystallizing the product in methylene chloride, tetrahydrofuran and sodium hydroxide. See **WO 99/06398 A1**, at page 13, lines 15 – 29, “Example VIII.” The method of making “trityl irbesartan” disclosed in **WO 99/06398**, which was determined to be the closest prior art, does not anticipate or render obvious

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the limitations for the method for making "trityl irbesartan" as claimed in **Claims 1 – 11** of the present invention.

Therefore, for the reasons provided above, **Claims 1 – 11** are allowable.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should accompany the issue fee. Such submissions should be clearly labeled as "Comments on Statement of Reasons for Allowance."

Conclusion

Claims 1 – 11 are allowed.

Claims 12 – 46 were cancelled by an examiner's amendment authorized by applicant.

Two minor typographical errors in the **Specification** were corrected by examiner's amendment authorized by applicant.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Anthony J. Paviglianiti** whose telephone number is **(571) 272-3107**. The examiner can normally be reached on Monday-Friday, 8:30 a.m. - 5:30 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph K. McKane, can be reached at (571) 272-0699. **The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300. Please note that this is a new central FAX number for all official correspondence.**

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR

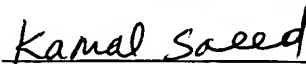

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system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



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